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EXAMINER

QUINONES, ISMAEL C

ART UNIT PAPER NUMBER

2686

DATE MAILED: 12/19/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

TS

**Office Action Summary**

Application No.

09/736,323

Applicant(s)

LUNDQVIST ET AL.

Examiner

Ismael Quiñones

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

The **title** of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Telecommunications Network is a much broader description within the purpose of the invention; a suggested title for the application could be one such as "Cell grouping using macrodiversity" or "Hierarchical radio link establishment".

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-3, 5-7, 11-14, 16-18, and 22** are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al. (U.S. Pat. No. 5,640,678).

Regarding **claim 1**, Ishikawa et al. discloses a mobile telecommunications network/system (Abstract, line 1; Figure 5, column 7, lines 25-30), employing macrodiversity (Fig. 6, column 9, lines 54-55), wherein a mobile station (Figure 6, item 8), can establish a plurality of radio links with the network cells (Fig 7, items 31-36; column 10, line 12-17), wherein the cells of the network are

considered in groups (Fig. 7 items 31-36 belonging to macrocell item 10), and whether to establish a new radio link between a mobile station and a new cell the network applies a quality criteria (i.e. received signal level) to the new radio link where the transmission signal is measured by the group/macrocell level comparator circuit(Fig. 6, item 71;col. 9, line 57-62), with which the mobile station does not already have a link.

Regarding **claim 2** and as applied to claim 1, Ishikawa et al. disclose that the network applies a more easily satisfied criterion to the establishment of a new link with a cell in one or more groups with which the mobile station already has a link by not placing a handover when the mobile station is within the cell group (col. 11, line 41-45), and a less easily satisfied criterion to the establishment of a new link with a cell in a group with which the mobile station currently has no radio link by placing a handover when the mobile station is moving from one cell group to another (col. 11 line 46-53).

Regarding **claim 3** and as applied to claim 1, Ishikawa et al. disclose a mobile cellular telecommunications network criteria related to signal quality level by means of measuring the signal received from the mobile station with the cells group signal level comparator circuit in order to use a selection criteria (col. 9, line 56-62;Figure 6, item 71).

Regarding **claims 5 and 6**, and as applied to claim 1, Ishikawa et al. also disclose a plurality of layers of groups (macrocells Figure 5, items 1b, 2b, ..., nb), such that each cell (Fig. 5, items 1a921-1a9m, 2a91-2a9m,..., na91-n9am) may be in one group within each layer (Fig. 5, items 1a, 2a,..., na) where each layer is defined as the base station exemplifying the embodiment of a layer. Ishikawa also relates the cell groups (Figure 5, items 1b, 2b, ..., nb) according to a respective base station (Fig. 5 items 1a, 2a, ..., na; column 11, line 24-35).

Regarding **claim 7** and as applied to claim 5, Ishikawa et al. disclose the relationship for the classification of cell groups, which pertains to a base station that as well relates to a respective radio network controller or base station controller (Figure 5, item C).

Regarding **claim 11** and as applied to claim 1, Ishikawa et al. discloses a variety of mobile cellular telecommunications systems one of them using CDMA (Code Division Multiple Access) channel communication (radio link) system (col. 6, line 14-22).

Regarding **claim 12**, Ishikawa et al. discloses a method of controlling a mobile telecommunications network/system (Abstract, line 1; Figure 5, column 7, lines 25-30) employing macrodiversity (Fig. 6, column 9, lines 54-55) wherein a mobile station (Figure 6, item 8) can establish a plurality of radio links with the network cells (Fig 7, items 31-36; column 10, line 12-17), wherein the cells of the network are considered in groups (Fig. 7 items 31-36 belonging to macrocell item 10), and whether to establish a new radio link between a mobile station and a new cell the network applies a quality criteria (i.e. received signal level) to the new radio link where the transmission signal is measured by the group/macrocell level comparator circuit (Fig. 6, item 71; col. 9, line 57-62), with which the mobile station does not already have a link.

Regarding **claim 13** and as applied to claim 12, Ishikawa et al. disclose a method in which the network applies a more easily satisfied criterion to the establishment of a new link with a cell in one or more groups with which the mobile station already has a link by no placing a handover when the mobile station is within the cell group (col. 11, line 41-45), and a less easily satisfied criterion to the establishment of a new link with a cell in a group with which the mobile station currently has no radio link by placing a handover when the mobile station is moving from one cell group to another (col. 11 line 46-53).

Regarding **claim 14** and as applied to claim 12, Ishikawa et al. disclose a method of controlling a mobile cellular telecommunications network criteria related to signal quality level by means of measuring the signal received from the mobile station with the cells group signal level comparator circuit in order to use a selection criteria (col. 9, line 56-62; Figure 6, item 71).

Regarding **claims 16 and 17**, and as applied to claim 12, Ishikawa et al. also disclose a method wherein a plurality of layers of groups (macrocells Figure 5, items 1b, 2b, ..., nb) can be defined, such that each cell (Fig. 5, items 1a921-1a9m, 2a91-2a9m, ..., na91-n9am) may be in one

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group within each layer (Fig. 5, items 1a, 2a,..., na) where each layer is defined as the base station exemplifying the embodiment of a layer. Ishikawa also relates the cell groups (Figure 5, items 1b, 2b, ..., nb) according to a respective base station (Fig. 5 items 1a, 2a, ..., na; column 11, line 24-35).

Regarding **claim 18** and as applied to claim 16, Ishikawa et al. disclose a method wherein the relationship for the classification of cell groups pertains to a base station that as well relates to a respective radio network controller or base station controller (Figure 5, item C).

Regarding **claim 22** and as applied to claim 12, Ishikawa et al. discloses a method for a variety of mobile cellular telecommunications systems wherein one of them uses CDMA (Code Division Multiple Access) channel communication (radio link) system (col. 6, line 14-22).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**5. Claims 4 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (U.S. Pat. No. 5,640,678) in view of Achour et al. (WO 01/03464).

Regarding **claim 4** and as applied to claim 1, Ishikawa et al. disclose a mobile telecommunications network utilizing macrodiversity comprising a plurality of cell groups by means of a establishing a plurality of radio links with the cells in the network based on a network quality criterion. Ishikawa et al. fail to disclose a relationship between the time period in which a signal quality level is satisfied and the mobile telecommunications network.

However, this is clearly shown by Achour et al. (WO 01/03464), which disclose a signal quality criteria for a respective base station threshold in which the time period (handoff transition) or "time drop" depends upon the threshold uphold (Page 2, lines 18–23).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made for Ishikawa et al. signal quality criteria relating to the transition time for each cell group and their respective quality levels to uphold a signal in between cell groups when the performance level falls or exceeds a threshold as taught by Achour et al.. Such approach would have allowed for a better continuity for the mobile station transition between groups without dropping the previous radio link establishment.

Regarding **claim 15** and as applied to claim 12, Ishikawa et al. disclose a method of controlling a mobile telecommunications network utilizing macrodiversity comprising a plurality of cell groups by means of a establishing a plurality of radio links with the cells in the network based on a network quality criterion. Ishikawa et al. fail to disclose a relationship between the time period in which a signal quality level is satisfied and the mobile telecommunications network.

However this is clearly shown by Achour et al. (WO 01/03464), which disclose a signal quality criteria method for a respective base station threshold in which the time period (handoff transition) or "time drop" depends upon the threshold uphold (Page 2, lines 18–23).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made for Ishikawa et al. signal quality criteria relating to the transition time for each

cell group and their respective quality levels to uphold a signal in between cell groups when the performance level falls or exceeds a threshold as taught by Achour et al.. Such approach or method would have allowed for a better continuity for the mobile station transition between groups without dropping the previous radio link establishment.

6. **Claims 8-10 and 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (U.S. Pat. No. 5,640,678) in view of Rinne et al. (U.S. Pat. No. 6,574,473).

Regarding **claim 8** and as applied to claim 5, Ishikawa et al. discloses a plurality of cell groups (macrocells) associated with a base station (Fig. 5, items 1b-nb for cell groups and items 1a-na for their respective base stations; col. 7, lines 25-35) which are associated as 2 or more groups. Ishikawa et al. also disclose a network controller (mobile network control center; Figure 5 item C; col. 7, lines 25-35), which is associated with the cell groups base station and contained as a group in the mobile telecommunications network/system. Ishikawa fail to disclose a second network controller in the network associated as a second group in the network.

However this is clearly shown by Rinne et al., which disclose a second radio network controller (base station controller; Figure 1; col. 1, 45-56; col. 22 lines 15-25) and the base stations and cells groups as an integral part of the telecommunications network.

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to use Ishikawa et al. singular controller group as the pattern for a plurality of network controllers compounding a entire communications network as taught by Rinne et al., for the purpose of categorizing the parameters and the criteria for priority radio link establishment selection in a telecommunications network employing macrodiversity.

Regarding **claim 9** and as applied to claim 8, Ishikawa et al. disclose a less satisfied and a more satisfied network quality criterion for the establishment of radio links applied to cells



groups associated with a base station, Ishikawa et al. fail to disclose a network quality criterion for the establishment of radio links with cell groups associated with a radio network controller (base station controller) which the mobile station currently has no radio link.

However this clearly shown by Rinne et al., which disclose a criterion for cell groups associated with a radio network controller (base station controller) for the establishment of radio links with a mobile station, where handover between radio network controllers are made based on the transition of the mobile station between the cells (coverage areas) provided by the base stations where such base stations are associated with different radio network controllers (col. 1, lines 53-59; col. 4, lines 45-48; col.4, lines 56-58).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to use Ishikawa et al. quality criterion for the establishment of radio links between the mobile station and cell groups associated with base stations as a basic approach for the establishment of radio links with cells associated with different radio network controllers as taught by Rinne et al.. This would have allowed a better performance for mobile station transitions in great scale and the reliability of such components establishing radio links about the telecommunications network.

Regarding **claim 10** and as applied to claim 1, Ishikawa et al. disclose a mobile telecommunications network utilizing macrodiversity comprising a plurality of cell groups by means of a establishing a plurality of radio links with the cells in the network based on a network quality criterion. Ishikawa et al. fail to disclose a mobile station active list of cells to which it has radio links, and the criteria for establishing them relative to the cells on the active list.

However this is clearly shown by Rinne et al., which disclose an active set of base stations used to measure the signal strength/quality (col. 3 line 35-42).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Ishikawa et al. cell groups establishing radio inks based on a signal quality criteria for each of the cells in categorizing them in an active set as taught by Rinne et al..

Such selecting criteria would allow a better mobile control radio link establishment for neighboring cell or cell groups.

Regarding **claim 19** and as applied to claim 16, Ishikawa et al. discloses method wherein a plurality of cell groups (macrocells) associated with a base station (Fig. 5, items 1b-nb for cell groups and items 1a-na for their respective base stations; col. 7, lines 25-35) are linked as 2 or more groups. Ishikawa et al. also disclose a network controller (mobile network control center; Figure 5 item C; col. 7, lines 25-35), which is associated with the cell groups base station and contained as a group in the mobile telecommunications network/system. Ishikawa fail to disclose a second network controller in the network associated as a second group in the network.

However this is clearly shown by Rinne et al. (U.S. Pat. No. 6,574,473) which disclose a method wherein a second radio network controller (base station controller; Figure 1; col. 1, 45-56; col. 22 lines 15-25), and the base stations, and cells groups as an integral part of the telecommunications network.

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to use Ishikawa et al. singular controller group as the pattern for a plurality of network controllers compounding a entire communications network as taught by Rinne et al., for the purpose of categorizing the parameters and the criteria for priority radio link establishment selection in a telecommunications network employing macrodiversity.

Regarding **claim 20** and as applied to claim 12, Ishikawa et al. disclose a less satisfied and a more satisfied network quality criterion method for the establishment of radio links applied to cells groups associated with a base station, Ishikawa et al. fail to disclose a network quality criterion for the establishment of radio links with cell groups associated with a radio network controller (base station controller) which the mobile station currently has no radio link.

However this clearly shown by Rinne et al. (U.S. Pat. No. 6,574,473) which disclose a method criterion for cell groups associated with a radio network controller (base station controller) for the establishment of radio links with a mobile station, where handover between radio network

controllers are made based on the transition of the mobile station between the cells (coverage areas) provided by the base stations where such base stations are associated with different radio network controllers (col. 1, lines 53-59; col. 4, lines 45-48; col.4, lines 56-58).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to use Ishikawa et al. quality criterion for the establishment of radio links between the mobile station and cell groups associated with base stations as a basic approach for the establishment of radio links with cells associated with different radio network controllers as taught by Rinne et al.. This would have allowed a better performance for mobile station transitions in great scale and the reliability of such components establishing radio links about the telecommunications network.

Regarding **claim 21** and as applied to claim 12, Ishikawa et al. disclose a method for controlling a mobile telecommunications network utilizing macrodiversity comprising a plurality of cell groups by means of a method for the establishment of a plurality of radio links with the cells in the network based on a network quality criterion. Ishikawa et al. fail to disclose a mobile station active list of cells to which it has radio links, and the criteria for establishing them relative to the cells on the active list.

However this is clearly shown by Rinne et al. (U.S. Pat. No. 6,574,473) which disclose a method wherein an active set of base stations is used to measure the signal strength/quality (col. 3 line 35-42).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Ishikawa et al. cell groups establishing radio links based on a signal quality criteria for each of the cells in categorizing them in an active set as taught by Rinne et al.. Such selecting criteria would allow a better mobile control radio link establishment for neighboring cell or cell groups.

7. **Claim 23 and 24** under 35 U.S.C. 103(a) as obvious over Ishikawa et al. (U.S. Pat. No. 5,640,678) in view of Rinne et al. (U.S. Pat. No. 6,574,473), further in view of Achour et al. (WO 01/03464).

Regarding **claims 23 and 24**, Ishikawa et al. discloses a method of controlling a mobile telecommunications network/system (Abstract, line 1; Figure 5, column 7, lines 25-30) employing macro diversity (Fig. 6, column 9, lines 54-55) wherein a mobile station (Figure 6, item 8) can establish a plurality of radio links with the network cells (Fig 7, items 31-36; column 10, line 12-17), wherein the cells of the network are considered in groups (Fig. 7 items 31-36 belonging to macro cell item 10), and whether to establish a new radio link between a mobile station and a new cell the network applies a quality criteria (i.e. received signal level) to the new radio link where the transmission signal is measured by the group/macro cell level comparator circuit (Fig. 6, item 71; col. 9, line 57-62), with which the mobile station does not already have a link. Ishikawa et al. fail to disclose a mobile station active list of cells to which it has radio links, and the criteria for establishing them relative to the cells on the active list.

However this is clearly shown by Rinne et al. (U.S. Pat. No. 6,574,473) which discloses a method wherein an active set of base stations is used to measure the signal strength/quality (col. 3 line 35-42).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Ishikawa et al. cell groups establishing radio links based on a signal quality criteria for each of the cells in categorizing them in an active set as taught by Rinne et al. Such selecting criteria would allow a better mobile control radio link establishment. Ishikawa et al. in view of Rinne et al. fail to disclose a relationship between the time period in which a signal quality level is satisfied and the mobile telecommunications network.

However this is clearly shown by Achour et al. (WO 01/03464), which disclose a signal quality criteria method for a respective base station threshold in which the time period (handoff transition) or "time drop" depends upon the threshold uphold (Page 2, lines 18-23).

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Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made for Ishikawa et al. signal quality criteria method in view of Rinne et al. active set selection method to relate the transition time for each cell group and their respective quality levels to uphold a signal in between cell groups when the performance level falls or exceeds a threshold as taught by Achour et al.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Ishikawa et al. (U.S. Pat. No. 5,640,678)**

**Achour et al. (WO 01/03464 {Filing Date: 6 July 2000}; U.S. Pat. No. 6,363,260)**

**Rinne et al. (U.S. Pat. No. 6,574,473)**

9. Any response to this Office Action should be **faxed to** (703) 872-9314 or **mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Hand-delivered** responses should be brought to

Crystal Park II

2021 Crystal Drive  
Arlington, VA 22202  
Sixth Floor (Receptionist)

10. Any inquiry concerning this communication on earlier communications from the Examiner should be directed to Ismael Quiñones whose telephone number is (703) 305-8997. The Examiner can normally be reached on Monday-Friday from 8:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9301.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose number is (703) 305-4700 or call customer service at (703) 306-0377.

*Ismael Quiñones*

I.Q

October 27, 2003

*Marsha D Banks-Harold*  
MARSHA D. BANKS-HAROLD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600